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OFFICIAL

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Applicant	:	Agapious Agapiou, et al.	
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Commissioner for Patents
P. O. Box 1450
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APPEAL BRIEF

Sir:

This is an Appeal to the Board of Patent Appeals and Interferences from the non-Final Rejection mailed January 27, 2004 and the Advisory Action dated April 16, 2004.

I) Real Party in Interest

Inventors' assignment recorded, at reel 010480, frame 0526, on December 20, 1999, shows the assignee as Univation Technologies, LLC. This entity is the real party in interest.

II) Related Appeals or Interferences

Applicants are unaware of any related Appeals or Interferences.

III) Status of the Claims

Claims present in the above referenced case are 1-12 and 13-22. The claims as currently constituted are found in section X. (Appendix) attached to this Brief.

IV) Status of the Amendments

No amendment has been filed subsequent to the amendment filed under 37 CFR 1.116 on March 26, 2004, and entered by the Examiner.

V Summary of the Invention

By heating a metallocene catalyst compound and/or reaction product of an activator and a metallocene catalyst compound and/ or an activated metallocene catalyst and then combining with a carrier, optionally a heated carrier (as seen in paragraphs **[0059]** to **[0065]**) the catalyst system results in a higher activity and/or lower tendency to foul a reactor, than not heating the respective components (as can be seen from tables 1A, 1B, 2, and 3), or heating the respective components to a lower temperature.

In claimed embodiments, a metallocene catalyst compound is heated from 75°C to 125°C (claim 1), from 75°C to 100°C (claim 3), and from 60°C to 110°C (claim10).

In other claimed embodiments, a metallocene catalyst compound and an activator are combined and heated to a temperature from 60°C to 125°C (claim 14), or from 75°C to 100°C (claims 20 and 22), or from 60°C to 110°C (claims 18 and 21) or from 60°C to 100°C (claim 19); and the heated mixture is combined with a carrier, the carrier may be at ambient conditions, or may be heated.

In still other claimed embodiments, a reaction product comprising a metallocene catalyst compound and an activator are heated to from 60°C to 125°C (claim 6) or from 75°C to 100°C (claim 7).

In other claimed embodiments, an activated metallocene product is heated from 60°C to 125°C (claim 8), or from 75°C to 100°C (claim 9).

Further, in examples, the unexpected result of this difference in temperature ranges are shown. In Table 1A, a mixing temperature of 25°C for (comparative) examples 2 & 3, results in similar activity as the higher mixing temperature of example 1 (68°C), but substantially greater fouling (fouling index of 1.0 and 2.0 for examples 2 and 3 respectively, versus a fouling index of 0 for example 1 at a higher temperature). In a different set of examples, in Table 1B, higher temperature mixing (i.e. 85°C of example 6) results in a fouling index of 0.5, versus a fouling index of 2 for example 4, mixed at 65°C.

Moving to Table 2, example 9 mixed at 85°C gives an activity of 2625, 43% higher than example 10, mixed at 25°C (activity of 1830).

V) Issues

A. Whether claims 4, 5, 14 and 21 are indefinite under 35 USC § 112, Second Paragraph;

B. Whether claims 1-4, 6, 7, 14, 15 and 18-20 are Anticipated under 35 USC § 102(b) by WO 96/35729 (Razavi I);

C. Whether claims 1-12, 14, 15 and 18-20 are rendered Obvious under 35 USC § 103(a) by (Razavi I); and

D. Whether claims 1-12, 14, 15 and 18-22 are rendered Obvious under 35 USC § 103(a) by Razavi I in view of US 5,914,289 (Razavi II).

VI) Grouping of the Claims

The claims stand or fall together.

VII) Argument

Issue A

During an Interview on March 25, 2004, it was agreed that in claim 4 a different temperature range would be used. The temperature range was amended into the claims in the Response dated March 26, 2004. In claim 5, it was agreed during the Interview that removing the phrase "room temperature" would address the Examiner's rejection.

Additionally, the Examiner does not believe that there are differences between claims 14 and 21. Among the differences between claims 14 and 21 is a different claimed temperature range (60°C to 125°C in claim 14, and 60°C to 110°C in claim 21).

While these agreements and subsequent amendments may have addressed the Rejections, no indication was given in the Advisory Action of April 16, 2004, so this Issue becomes part of this Brief.

Issue B

Razavi I suggests "...a) reacting a metallocene with an alumoxane at a temperature comprised between 15 and 50°C..." abstract; page 2, lines 31-32; page 3, lines 22-23 and Examples at page 10, line 19). Razavi I does not disclose heating the metallocene catalyst compound, as in the present claims, to a temperature of from 75°C -125°C (claim 1); heating a metallocene and activator to 60-125°C (claims 6, 8, & 14); or heating the metallocene catalyst compound to a temperature from 75 to 100°C (claim 3); heating a metallocene and activator to 75 to 100°C (claims 7, 9, 20& 22); heating the metallocene catalyst compound to a temperature of from 60-110°C (claim 10); heating a metallocene and activator to 60-110°C (claims 18 & 21), and to 60 to 100°C (claim 19).

The MPEP is clear at § 2131.03 "Prior art which teaches a range within, overlapping or touching the claimed range anticipates if the prior art range discloses the claimed range with "sufficient specificity". In the present case however, the upper limit of the Razavi I metallocene alumoxane range is at least 10°C below the claimed range.

Issue C

As noted above, Razavi I discloses heating the metallocene and activator to between 15°C and 50°C, and all Razavi I examples show combination of metallocene and activator at 25°C. This is contrasted above with the present claim language. Further, Applicants demonstrate in their examples the unexpected result of this difference in temperature ranges. In Table 1A of the present disclosure, a mixing temperature of 25°C for examples 2 & 3 (the Razavi I mixing temperature), results in similar activity as the higher mixing temperature of example 1 (68°C), but substantially greater fouling (fouling index of 1.0 and 2.0 for examples 2 and 3 respectively, versus a fouling index of 0 for example 1 at a higher temperature). In a different set of examples, in Table 1B, higher temperature mixing (i.e. 85°C of example 6) results in a fouling index of 0.5, versus a fouling index of 2 for example 4, mixed at 65°C. Moving to Table 2, example 9 mixed at 85°C gives an activity of 2625, 43% higher than example 10, mixed at 25°C (activity of 1830). So the unexpected results of heating the metallocene/activator to a higher

temperature than disclosed or exemplified by Razavi I are either higher activity or lower fouling index.

Issue D

Razavi I is discussed above.

Razavi II neither discloses nor suggests the claimed temperature ranges for the reaction of the metallocene compound or the metallocene-activator compound. Razavi II suggests the same temperatures for reacting the metallocene with an aluminoxane as Razavi I, (specifically, between 15 and 50°C) (note column 4, lines 7-9 and column 4, lines 31-34 of Razavi II). Therefore Razavi II adds nothing to Razavi I.

VIII) In Conclusion

Given the facts:

A) That Applicants have addressed the Examiner's stated issues through claim amendments in a response dated March 26, 2004;

B) That Razavi I does not disclose the presently claimed temperature ranges;

C) That Razavi I does not disclose or suggest the presently claimed ranges and in light of the unexpected productivity and fouling data; and

D) that Razavi II adds nothing to Razavi I;

Applicants urge reversal of all Rejections.

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Appeal Brief dated: May 24, 2004
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Note is made that the correspondence should be sent to:

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CERTIFICATE OF FACSIMILE TRANSMISSION UNDER 37 CFR 1.8(a)

I hereby certify that this paper is being facsimile transmitted to the United States Patent and Trademark Office on May 24, 2004.

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X. Appendix

1. A method for preparing a supported catalyst system comprising:
   (a) heating a composition comprising a metallocene catalyst compound to a temperature of from 75°C to 125°C; and
   (b) combining the heated composition with a carrier.

2. The method of claim 1 wherein the carrier is heated.

3. The method of claim 1 wherein in step (a) the composition is heated to a temperature in the range of from 75°C to 100°C.

4. The method of claim 2 wherein the carrier is heated to a temperature in the range of from 26°C to 150°C.

5. The method of claim 1 wherein the metallocene catalyst compound has a solubility less than 20 weight percent of metallocene catalyst compound in toluene at (25°C).

6. A method for making a supported catalyst system comprising:
   (a) forming a reaction product comprising a metallocene catalyst compound and an activator;
   (b) heating the reaction product to a temperature of from 60°C to 125°C;
   (c) introducing a carrier, optionally heating the carrier;
   (d) combining the heated reaction product with the carrier or optionally the heated carrier.

7. The method of claim 6 wherein the reaction product is heated to a temperature in the range from 75°C to 100°C.

8. A method for making a supported catalyst system comprising:

(a) heating an activated metallocene catalyst product to a temperature of from 60°C to 125°C;

(b) heating a carrier; and

(c) combining the heated carrier and the heated activated metallocene catalyst.

9. The method of claim 8 wherein the activated metallocene catalyst is heated to a temperature of from 75°C to 100°C.

10. A method for preparing a supported catalyst system comprising:
(a) heating a composition comprising a metallocene catalyst compound to a first temperature, wherein the first temperature is in the range of from 60°C to 110°C;
(b) heating a carrier at a second temperature; and
(c) combining said metallocene catalyst, and said carrier, at a third temperature.

11. The method of claim 10 wherein the first, second and third temperatures are the same.

12. The method of claim 10 wherein the first and second temperatures are the same.

13. (Cancelled)

14. A method for preparing a supported catalyst composition comprising:
(a) combining a metallocene catalyst compound and an activator at a temperature in the range of from 60 °C to 125°C; and
(b) introducing a carrier.

15. The method of claim 14 wherein the supported catalyst composition is dried or substantially dried to a free flowing powder composition.

16. The method of claim 15 wherein the free flowing composition is reslurried in a liquid.

17. The method of claim 16 wherein the liquid is mineral oil.

18. The method of claim 14 wherein the metallocene catalyst compound and activator are combined at a temperature of from 60 °C to 110°C.

19. The method of claim 14 wherein the metallocene catalyst compound and activator are combined at a temperature of from 60°C to 100°C.

20. The method of claim 14 wherein the metallocene catalyst compound and activator are combined at a temperature of from 75°C to 100°C.

21. A method for preparing a supported catalyst composition comprising:

a) combining a metallocene catalyst compound and an activator at a temperature in the range of from 60°C to 110°C; and
b) introducing a carrier.

22. The method of claim 21, wherein the metallocene catalyst compound and activator are combined at a temperature of from 75°C to 100°C.